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ABSTRACT

The communication skills center at Carnegie Mellon University helps individual students master the technical writing skills necessary for specific disciplines and professions. Through collaboration with the instructors in the various disciplines, the program operates both as a consulting service outside the center (devising and evaluating the writing components of particular courses) and as a teaching service (assisting individual students in preparing writing assignments and alerting referred students to the specific writing skills demanded in the context of particular professions). Exercises used at the center concentrate on the strategies that are important in all professional writing, such as establishing the reader's frame of reference, organizing ideas logically, accumulating and testing evidence to support a hypothesis, and organizing large sets of information into logical categories. Other exercises stress recognizing the statements of the writer's purpose and assessing the writer's bias. (Six sample exercises are appended.) (MAI)

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INDIVIDUAL INSTRUCTION: TAILORED TO PARTICULAR NEEDS
AND SPECIFIC DISCIPLINES

At Carnegie-Mellon University, where the average SAT verbal score is over 500, the Communication Skills Center deals with reasonably well prepared graduate and undergraduate students who can come for help in all kinds of writing projects. And since Carnegie-Mellon is primarily a technical-professional institution, our goals and our methods of achieving them have become heavily focused on helping individual students master the specific kinds of writing necessary in specific disciplines or professions.

This aspect of our operation involves our participation and collaboration with instructors in these specific disciplines or professions. We work, generally, in one of three ways: (1) In many instances we move out of the Center into the classroom. We become consultants: we work a writing component into a content course -- devising and evaluating assignments in collaboration with the instructor, or giving workshops or lectures in writing as part of the course instruction, and ultimately seeing some of the students in the course in individual conferences. We have participated and are participating in this way with the Departments of History, Engineering, Urban and Public Affairs, Teacher Education, Architecture, Philosophy, Design, and Computer Science. (2) When an instructor refers an individual student for work on an assignment in a professional course (Engineering or Administration Science, for example) we deal with the specific kind of task and structural format used in that discipline -- the technical report, the business letter or memo, or the critical analysis and evaluation of written material. (3) When an

instructor in a humanities course (English or History) refers a student whose major is in another discipline, we make a strong effort to alert the student to what his or her professional needs in writing will be, and we urge the student to work particularly on the skills that are important in the context of that professional area (for example, logic in pre-law, or audience in business or public affairs).

Through this experience in working with writing in various disciplines, we're developing an awareness and materials that we can use in these different contexts, much as we use sentence combining and other such strategies for facilitating good writing in general. Several of these writing exercises are adapted from A. D. Van Nostrand's Functional Writing, with specific professional content added. Six sample exercises are appended. The first four show strategies important in all professional writing; these strategies help the writer complete the tasks assigned in professional courses:

(1) Reader's frame of reference (p. 6)

Part I shows a writer's description of what his readers are like (subjective and objective characteristics) and how they will probably react to and use the written material. Such a description helps the writer communicate to these particular readers and helps him accomplish his purpose in writing.

Part II shows how a writer accommodates the frames of reference of different readers by establishing common ground between the writer and reader. In each case, the writer's organizing idea (what he or she wants to say) is the same; but the writer leads into this statement of the organizing idea by first acknowledging the reader's interests.

The needs for writers' awareness of the readers cannot be overemphasized in professional writing, and exercises such as these are of primary importance.

(2) Organizing Ideas (p. 7)

The organizing idea is a statement, an inference, that logically relates a given set of information in a paragraph or paragraph sequence. An organizing idea, which usually comes at the beginning of a statement, lets the reader know what significance the writer attaches to the information.

The example given here shows how each of four students has devised a different organizing idea for the same set of information, thus revealing dramatically that the organizing idea is not inherent in the information and that the writer can't assume the reader knows what inference the writer has in her head.

Teaching writers to begin a statement with an organizing idea helps them avoid a common problem -- telling about an experience or project in the order it happened, without first putting it in context.

(3) Accumulating and testing evidence to support a hypothesis (p. 8)

This exercise shows how the writer can develop and use a self-evaluative feedback system, moving from information to inference (hypothesis) and then testing that inference against further information. The goal here -- desirable in scientific and technical areas as well as in history -- is accuracy of inference, based on as much examination of evidence as is possible. The writer can repeat the process many times, continuing to gather evidence and refine her hypothesis.

(4) Organizing a large set of information (p. 9)

The example here encompasses a sequence of steps writers can use to organize large sets of information they have gathered through research. The exercise contains a sampling of what is likely to be a much larger set of information. It shows how the student can manage this information by a three part process: (a) grouping the information into related categories; (b) labeling the categories; and (c) arranging the categories in a logical sequence. Each of these categories is potentially a paragraph or larger section of a paper.

The next two examples show specific skills emphasized in specific disciplines.

(5) Problem purpose statements (p. 10)

Used as the introductory statement in the technical or professional report, the problem purpose statement gives the readers information they need when they need it and enables readers to know what the report is about even if they read only the beginning. The statement basically contains three parts: a statement of the problem, a statement of the writer's assignment or task in relation to the problem, and a statement of the writer's rhetorical purpose.

(6) Assessing a writer's bias (p. 11)

This example deals primarily with a reading, rather than a writing, problem. The student's task is to assess a writer's frame of reference -- e.g., bias -- in order to evaluate what he or she reads. In this case, clues in the statements by Trevor-Roper and by Clark should alert the reader to the contrast between Trevor-Roper's Eurocentric views and his rather narrow concept

of what history is, and Clark's Afrocentric views and expanded concept of history.

Incidentally, our use of the concept of frame of reference from two different angles, the reader's and the writer's, points up the close relationship between writing and reading.

These are some examples, in slightly abbreviated form, of possible approaches to the teaching of writing in specific disciplines. We're continuing to develop different materials to meet different situations. Ultimately, I think it's not the materials themselves that are important. It is, rather, that they are signs of the implementation of a particular kind of writing center role, a role that has two distinct aspects: one is the Center's ability to increase motivation and transference by providing instruction to students in a context that's real and important to them, because it's the context of the career they intend to pursue; and the other aspect is the Center's ability to provide expertise in the range of communication tasks, skills, and ways of thinking of many different disciplines. It seems especially good that these two aspects exist under one roof.

READER'S FRAME OF REFERENCE

I. Description of the reader's frame of reference

Reader: Management and staff in Corporate Planning and Comptroller group.

- 1) Audience level varies from the para-professional to the advanced professional.
- 2) The professional levels in the two groups are not equivalent.
- 3) Reader characteristics vary considerably based primarily upon how each reader can use the information.
- 4) Writer's discipline is management science. Reader's knowledge of this discipline varies from ignorance to familiarity. A need exists to bridge gap. Ignorance presents threat to reader, i.e., he views mathematical model as a "black box".
- 5) Need to establish the value of the math model to reader. The document will present its meaning and value, i.e., how it will help him do a better job.

II. Accommodating the reader's frame of referenceA. Establishing common ground

Writer: A graduate student in the School of Urban and Public Affairs

Organizing Idea:

I am seeking support for a project that will investigate the causes of the financial plight of minority-owned businesses and will recommend ways to stimulate and expand these businesses.

Reader A: A minority owner of a thriving business in a minority community.

Statement to Reader A:

The more thriving stores there are in your community, the more people will shop there. It would be good business practice, therefore, to invest time and money in projects to strengthen struggling but potentially successful businesses in your community.

Reader B: A City Counselor

Statement to Reader B:

Although an initial outlay of tax dollars to struggling minority-owned businesses may seem risky, stimulating and expanding these businesses could result in the creation of jobs, a decrease in welfare payments, and an increase in tax revenues. Therefore, it is beneficial to the city to support projects that help minority-owned businesses.

Organizing Ideas

Subject: Electric cars

Set of information:

- limited performance capability
- battery power
- twenty years to develop
- pollution
- range of forty miles

Organizing Ideas:

1. The energy shortage that will surely be with us for some time to come may be somewhat alleviated by the reintroduction of the electric car.
2. The "cast-off" concept of electric cars is receiving new attention in these times of energy shortage.
3. More spending is expected for electric car development.
4. Despite the efforts of the engineering and scientific communities for twenty years, it is doubtful that an effective electric car can be built to equal or surpass the gasoline driven automobile.

ACCUMULATING AND TESTING EVIDENCE TO SUPPORT A HYPOTHESIS

In this exercise, the writer is given information about possible causes of changes in sub-Saharan Africa prior to 1800. The information, presented by means of an argument among 5 speakers, is basically about whether these changes resulted from internal innovations or events, or from external causes (slave traders, Arab settlements, etc.)

The writers' task is as follows:

- (1) Describe a problem or question implied by the above discussion.
- (2) List two or three hypotheses that might resolve this problem or correctly answer this question.
- (3) Select one of these hypotheses to develop further.
- (4) Make a list of some evidence (5-8 items) that ought to exist if your hypothesis is accurate.
- (5) Review the preceding discussion, your notes and the text to see if you can find this evidence. Also, look for additional evidence that refutes or supports your hypothesis.
- (6) Make a list of the evidence you have found that supports your hypothesis and another list of the evidence that refutes your hypothesis.
- (7) Revise your hypothesis so that it accounts for all the evidence you have found -- both supporting and contradicting evidence.
- (8) Write a statement supporting and developing your new hypothesis.

ORGANIZING A LARGE SET OF INFORMATION

Subject: The American Porch

Set of Information:

- Entrance hall of 17th century New England saltbox house was called a porch.
- Most common use of porch in English colonies during 17th century was as an internal vestibule space.
- Dutch builders in New Jersey and New York considered their porch an outside living space.
- Settler cabins west of the Alleghenies incorporated the porch as a major living space.
- The large central hall in Southern plantation houses originated as an outdoor living space.
- The climate, surroundings, and style of living in the South created a house type that was unique in the U.S., and the porch was an integral element of that type.
- In courtyard houses, a private, cool veranda, which served as the main living space, was wrapped around the facades of the court.
- An example of the Greek revival is the Ohio T-shaped plan, which had a porch with Greek columns.
- The Greek revival styles did not grow from regional conditions.
- In the late 19th century, houses with extensive front porches were built all over the U.S., to maximize the pleasures of outdoor summer life and set the stage for neighborly interaction.
- In the late 19th century, porches became an obsession.
- Bungalows, popular at the beginning of the 20th century, were a response to climatic conditions.
- Use of the porch was at its height during the early years of the 20th century, then began to decline.
- The porch declined for the following reasons: (1) use of telephone for gossip, (2) automobile noise, (3) TV for entertainment, and (4) air conditioning.

Possible Organizing Idea: Porches in America were a response to the climate, the style of living, and some foreign influence.

Possible Categories and Sequence of Information:

- 3 Porches were used as inside or outside space.
- 1 Porch designs were a response to climate.
- 4 Porches were built for relaxation: the view, chatting with neighbors, etc.
- 5 Building and use of porches has declined recently.
- 2 There were foreign influences in the design of porches.

PROBLEM PURPOSE STATEMENT

From a report by an industrial

Our report on "Housekeeping Department Staffing Overview," dated November 22, 1973, indicates a standard staffing requirement of 191 full-time employees at Sunnybrook Medical Centre in Toronto, Ontario. The actual staffing is 200 employees, indicating an overstaffing of 9 people. Your recommendations for accomplishing a staffing reduction include improved cyclical scheduling techniques and policies, and reduced cleaning frequencies.

PROBLEM

The Sunnybrook Administration, realizing this overstaffing and acknowledging your recommendations, has required CSF Ltd. to perform an analysis of the housekeeping cyclical schedules. In conjunction with this analysis, the Administration is also concerned with replacement of workers who are absent due to illness, vacation and holidays. At present, there is no regulative provision for these occurrences, resulting in a decreased quality of housekeeping.

ASSIGNMENT

ADDITIONAL
PROBLEM
AND
TASKPURPOSE

The purposes of this study are: (1) to evaluate the present cyclical schedules, (2) to develop schedules, where possible, that would reduce staffing without jeopardizing the quality standards, and (3) to develop a staffing replacement method to handle absenteeism.

SPECIFIC
TECHNICAL
TASKS

I have recieved the present housekeeping schedules from Sunnybrook Medical Centre and have performed a preliminary analysis of them. The purpose of this report is to summarize my findings to date for your information and to specify additional data I need to complete the analysis.

PURPOSE

from J. D. Mathes and Dwight W. Stevenson,
Designing Technical Reports
(Bobbs-Merril Co., Inc.: Indianapolis,
1976.)

ASSESSING A WRITER'S BIAS

Subject: The African Past

...It is fashionable to speak today as if European history were devalued: as if historians, in the past, have paid too much attention to it; and as if, nowadays, we should pay less. Undergraduates, seduced, as always, by the changing breath of journalistic fashion, demand that they should be taught the history of black Africa. Perhaps, in the future, there will be some African history to teach. But at present there is none, or very little: there is only the history of the Europeans in Africa. The rest is largely darkness, like the history of pre-European, pre-Columbian America. And darkness is not a subject for history.

Please do not misunderstand me. I do not deny that men existed even in dark countries and dark centuries, nor that they had political life and culture, interesting to sociologists and anthropologists; but history, I believe, is essentially a form of movement and purposive movement too. It is not a mere phantasmagoria of changing shapes and costumes, of battles and conquests, dynasties and usurpations, social forms and social disintegration.

Hugh Trevor-Roper, The Rise of Christian Europe.

African history may well be the oldest in the world. The recent discoveries of Dr. Louis Leakey, a British archaeologist working in Tanzania, indicate that man has lived in Africa longer than any other place on earth -- for more than 1,750,000 years. There is a good chance, then, that the history of man started in Africa.

...For centuries, Africa has been thought of as the "dark continent," a land of naked savages, only one step beyond the Stone Age. We imagined a continent without any culture or history worth studying.

We Westerners are finally beginning to change our opinion, however. We now realize that "the darkness" was in our own minds. It was our own ignorance that prevented us from seeing the beauty in African culture and appreciating the contributions Africa has made to the world.

...Historians, then, have expanded their definition of history. They now include evidence from the oral tradition and from archaeology, as well as from written documents. As a result, they have made it possible (and necessary) for us to change our opinion of African history.

Leon Clark, ed., The African Past and the Coming of the European.

Questions:

1. What main ideas about pre-colonial Africa's history do these authors express?
2. Upon what kind of historical standards does each author seem to base his statement -- e.g., what does each author consider historically valuable?
3. What general values and attitudes do you think might underlie each author's statement?
4. Upon what evidence have you decided your answers to question number 3?